

October 13, 2004

Ms. Melissa Hall, WRC Engineer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Dear Ms. Hall:

On behalf of the City of Auburn, we have reviewed the City's Tentative NPDES No. CA0077712 and Waste Discharge Requirements Order No. R5-2004-____ and Cease and Desist Order No. R5-2004-____ dated August 19, 2004 and have the following comments.

Tentative NPDES Waste Discharge Requirements

Background

1. Item 5
 1. The first sentence should be changed to read: "The Discharger utilizes clay lined equalization ponds." Ponds 1, 2, 3, and 4 are lined with 6 to 8 inches of clay.
 2. The second sentence should be changed to read: "The quality of the treated domestic wastewater contained in the lined advanced treatment pond 1A, the lined storm water storage Ponds 2 and 3, and the lined treated water and storm water equalization Pond 4 is largely uncharacterized." As noted above, all of the ponds are lined with a six to eight inch layer of clay. Pond 1 is an advanced treatment pond with four cells. The first cell has nine 7.5 horse power aerators and the final three settling cells each have one 7.5 horse power aerator. All of the influent flow is directed to either the oxidation ditch or Pond 1A or both. Pond 1A discharges treated water to the oxidation ditch and Pond 4. During wet weather and when Pond 4 has filled, excess flows are directed from Pond 1A to Pond 2 and then to Pond 3 for storage until the level has dropped in Pond 4 at which time the stored water in Ponds 2 and 3 can be drained to Pond 4.
 3. The next to the last sentence should be deleted since the ponds are lined and the statement, we believe, is incorrect.
 4. The last sentence should be changed to read: "Based on groundwater monitoring data submitted by the Discharger, pollutants have not migrated to groundwater." The evidence for this conclusion is provide below in our comments to items 50, 51, and 52.
2. Item 50

1. The first sentence should be changed to read: "Based on information included in analytical laboratory results submitted by the discharger as part of its quarterly groundwater monitoring reports, the stormwater and treated water contained in the lined ponds has not degraded underlying groundwater for total dissolved solids (TDS)." The arguments in support of this statement follow.
 1. The ponds are lined with a six to eight inch layer of clay.
 2. The groundwater monitoring data since 1993 from the monitoring wells at the plant is summarized in Table 1. MW 5 has been defined as the upgradient well representing background water quality. A graph of the TDS data for this 11 year period is attached as Figure 1. A graph of the of the TDS data for the last five years is attached as Figure 2. As indicated in the graphs, the TDS of the upgradient well has been increasing over time and is currently around 160 mg/L. Item 5 of the Tentative WDR indicates that the TDS concentration in the ponds is 200 mg/L. Thus leakage from the ponds could only raise the TDS from 160 to 200 mg/L. However, MW 1, 2, and 3 are fairly consistent in their TDS concentration at an average of around 290 mg/L. MW 4 has shown an increase in TDS over time from about 300 mg/L to 400 mg/L. Further, MW 4 is directly downgradient of MW 3 and there is not a pond in between them. Whatever is causing the increase in TDS in MW 4 is not coming from the treatment or storage ponds.
 3. The background groundwater quality is defined as the water quality of Well 5. However, based on the location of MW 5, it is possible that MW 5 is being diluted by leaks from the canal and may not be truly representative of background water quality. It still needs to be determined what represents background water quality at the WWTP.
3. Item 51
 1. The first sentence should be changed to read: "Based on information included in analytical laboratory results submitted by the discharger as part of its quarterly groundwater monitoring reports, the stormwater and treated water contained in the lined ponds has not degraded underlying groundwater for nitrate." The arguments in support of this statement follow.
 1. The ponds are lined with a six to eight inch layer of clay.
 2. The groundwater monitoring data since 1993 from the monitoring wells at the plant is summarized in Table 1. A graph of the nitrate data for the 11 year period is attached as Figure 3. A graph of the of the nitrate data for the last five years is attached as Figure 4. The nitrate concentration in MW 5, the upgradient well, is higher than the nitrate concentration in MW 2 and 4. The nitrate in MW 1 is only slightly higher than that in MW 5. The only well that shows any increase in nitrate is MW3. Two waste activated sludge holding basins used to be located adjacent to MW 3. The sludge holding basins were abandoned in 1996. The nitrate in MW 3 has been decreasing ever since the sludge holding basins were abandoned. A

trend line for nitrate in MW 3 shows that nitrate in MW 3 is decreasing towards background levels, see Figure 4. Thus no additional mitigation for nitrate is required at the WWTP.

3. Item 5 of the Tentative WDR indicates that the ammonia concentration in the ponds is 14 mg/L-N. Any wastewater ammonia would be converted to nitrate soon after it entered the soil and groundwater. Thus if the ponds were leaking, the concentration of nitrate in groundwater would be expected to be increasing towards 14 mg/L-N. Since nitrate in groundwater has remained constant at background levels at MW 1, 2, and 4, the nitrate data provides evidence that the ponds are not degrading nitrate in groundwater and thus not leaking. Note also that the ammonia concentration in MW 1, 2, 3, and 4 has been consistently non-detect.

4. Item 52

1. The first sentence should be changed to read: "Based on information included in analytical laboratory results submitted by the Discharger as part of its quarterly groundwater monitoring reports, the stormwater and treated water contained in the lined ponds has not degraded underlying groundwater for total coliform organisms and caused exceedance of the Basin Plan groundwater bacteria objective of 2.2 MPN/100 ml." The arguments in support of this statement follow.
 1. The ponds are lined with a six to eight inch layer of clay.
 2. The groundwater monitoring data since 1993 from the monitoring wells at the plant is summarized in Table 1. A graph of the total coliform bacteria data for the last five years is attached as Figure 5. A graph of the fecal coliform bacteria data for the last five years is attached as Figure 6. Figures 5 and 6 do not show any trends.
 3. The upgradient well, MW-5, shows levels of total coliform organisms in exceedance of the Basin Plan groundwater bacteria objective of 2.2 MPN/100 ml about 40 percent of the time: December 1, 1997; June 9, 1998, September 14, 1998; January 5, 1999; March 15, 1999; December 5, 2000; December 21, 2001; February 26, 2002; April 30, 2003; February 5, 2004; and May 5, 2004. One would conclude that the natural background water quality is contaminated with total coliform organisms. Total coliform organisms occur naturally and is not a good indicator of human pollution. Even fecal coliform is not a perfect indicator but is preferred as its source is limited to warm blooded animals.
 4. The median fecal coliform count for four of the monitoring wells is <1.1 MPN/100 ml and for MW-2 it is <2 MPN/100 ml, see Table 1. This does not indicate contamination of groundwater for fecal coliform which would be expected if the treatment and stormwater storage ponds were leaking.
 5. The data in Table 1 shows that the phosphorous concentration in the ponds is 4 mg/L and that phosphorous has not been detected in groundwater

since 2000, see Figure 7. Thus groundwater is not degraded for phosphorous at the WWTP.

6. If nitrate, ammonia, fecal coliform, and phosphorous are not leaking from the ponds, it is not possible that total coliform bacteria are leaking from the ponds.
7. The source of total coliform bacteria in groundwater at the WWTP needs to be investigated. Possible sources include natural background levels, surface water contamination from birds and animals that frequent the area of the WWTP and intrusion through fractured rock or thin rocky soil, or leaks from the drainage canal.

5. Item 53

1. Item 53 must be deleted in its entirety. The reasons are as follows.
 1. As discussed above, the information included in analytical laboratory results submitted by the Discharger as part of its quarterly groundwater monitoring reports does not indicate that groundwater has been degraded due to the ponds.
 2. The WWTP is consistent with Resolution 68-16.
 3. A time schedule to implement a BPTC is not required.

B. Effluent Limitations

1. B.4.
 1. Attachment H. The formula for calculating the instantaneous maximum for silver is the same as the CCC formula for zinc and provides incorrect limits. Please verify that the formula for silver is correct.
 2. Attachment I. The CCC and CMC formulas are the same. Please verify that they should be the same as all of the other metals have different formulas.
2. B.8. Add the following as a second sentence: "Average daily dry weather discharge flow is defined as the average daily flow during the period from May 1 through October 31."

C. Equalization/Emergency Storage Pond Limitations

3. No comment

D. Sludge Disposal

4. No comment

E. Receiving Water Limitations

5. Item 11. Item 11 should be changed to read "The monthly average ambient temperature to increase more than 5°F."

F. Groundwater Limitations

6. Item 1.
 1. The total coliform limit cannot be met by even the upgradient well. The limit should either be:
 1. Deleted until item G.5. Groundwater Monitoring Tasks is completed and the natural background water quality determined.
 2. Replaced with fecal coliform since fecal coliform is a better indicator of human contamination than total coliform. The compliance period for determination of a median should be a seven sample period. In the last five years, all monitoring wells would have met a seven sample median of <2.2 MPN/100 ml.
 3. Left as is and add total coliform in groundwater to the Cease and Desist Order No. R-5-2004-____ pending completion of item G.5.
 2. The WWTP has no control over total coliforms in groundwater from background and natural sources.

G. Provisions

7. Item 5. Groundwater Monitoring Tasks.
 1. Add to the end: "The report shall provide a determination of the impact of the WWTP ponds on groundwater quality and whether a Best Practical Treatment Control evaluation is necessary."
8. Item 6. BPTC Evaluation Tasks.
 1. This item should be deleted in its entirety. Our analysis shows that groundwater has not been degraded at the WWTP and therefore a BPTC evaluation is not required at this time but the need for it would be addressed under item G.5.

MONITORING AND REPORTING PROGRAM NO. R5-2004-____

EFFLUENT MONITORING

9. There is no monitoring requirement for MBAS but there is an effluent limit.

RECEIVING WATER MONITORING

10. No comment.

GROUNDWATER MONITORING

11. Since there is no evidence that the WWTP has impacted groundwater, we request that the groundwater monitoring remain the same as the current groundwater monitoring program that includes quarterly monitoring for TDS, chloride, nitrate (as N), ammonia (as N), phosphorous, total coliform organisms, and fecal coliform. The groundwater monitoring program should remain the same until item G.5. is completed and a determination of natural background water quality made.

SLUDGE MONITORING

12. The first paragraph should be changed to read: "A composite sample of dewatered sludge shall be collected annually in accordance with EPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). The composite sample shall be a composite of a minimum of twelve (12) discrete samples taken at equal time intervals over 24 hours."
13. The first sentence of the third paragraph should be changed to read: "Annually by January 31, the Discharger shall submit an annual sludge report containing:
 1. Annual sludge production in dry tons and per cent solids.
 2. Quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols).

CEASE AND DESIST ORDER NO. R5-2004-____

FINDINGS

We are recommending that limits on total coliforms in groundwater be eliminated or replaced by fecal coliform. If Groundwater Limitations for total coliform are to be included in the WDR, then a discussion of the total coliform present in the monitoring wells should be added to the findings so that total coliform in groundwater can be included in the Order. The following should be included in the Cease and Desist Order if the final WDR contains Groundwater Limitations for total coliform organisms.

14. Item 3. In this case, add: "Total coliform organisms have been detected at levels greater than a median of 2.2 MPN/100 ml over seven-sample time periods in all groundwater monitoring wells at the WWTP including the upgradient well."
15. Item 4. Add to the end: "... and Groundwater Limitations for total coliform organisms."
16. Item 5. The fourth paragraph should be changed to read: "Compliance with this Order exempts the Discharger from mandatory minimum penalties for violations of effluent aluminum, ammonia, chloroform, manganese, methyl tert butyl ether (MTBE), nitrite, nitrate+nitrite, and organochlorine pesticides limitations and groundwater limitations for

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total coliform organisms only, in accordance with California Water Code Section 13385(j)(3).”

ORDER

17. Change the first sentence to read: “... organochlorine pesticides Effluent Limitations and total coliform organisms Groundwater Limitations contained in ...”

This is the last of our comments. Please call me or Glen Holdren (510-547-8205) if you have any questions regarding these comments.

Respectfully submitted,
BRACEWELL ENGINEERING, INC.

Lloyd W. Bracewell, PhD, RCE
Principal Engineer

cc: City of Auburn
BEI Office